

00-132

Verizon  
1300 I Street, N.W.  
Washington, D.C. 20005  
Voice 202 336-7892  
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Shawn Donnelly  
Staff Manager – Federal Regulatory



September 15, 2000

Mr. Dale Hatfield  
Chief – Office of Engineering and Technology  
Federal Communications Commission  
445 12th Street, SW  
Room 7-C155  
Washington, DC 20554

**Re: Final Service Outage Report**

Dear Mr. Hatfield:

In accordance with the requirements in CC Docket 91-273, enclosed is the Final Service Disruption Report for the Verizon service outage that occurred August 17, which affected Rochelle Park, NJ.

Please call me if you have any questions about this report or other service outage issues.

Sincerely,

A handwritten signature in cursive script that reads "Shawn Donnelly".

Enclosure

cc: R. Kimball

## WIRE LINE OUTAGE REPORTING TEMPLATE

Reporting Carrier <b>Verizon</b>	Date of Incident <b>8/17/2000</b>
Time of Incident <b>23:47</b>	Geographic Area Affected <b>Northern New Jersey</b>
Services Affected  IntraLATA Intraoffice <input type="checkbox"/> IntraLATA Interoffice <input checked="" type="checkbox"/> InterLATA Interoffice <input checked="" type="checkbox"/> E911 <input type="checkbox"/>	Number of Customers Affected <b>Approximately 1,944,000</b> <hr/> Number of Blocked Calls <b>918,145</b> <hr/> Outage Duration <b>13 Hrs     43 Min</b>
Background of the Incident <p>The Rochelle Park wire center is a major switching and cross connect hub for DS3 traffic in the northern New Jersey area. It houses three switches- an end office switch, a sector tandem, an access tandem-- and numerous digital cross-connect systems. Verizon uses the Alcatel Integrated Multirate Transport Node (iMTN) Broadband Digital Cross-connect System (BDCS) for broadband deployment.</p> <p>On August 17 at 23:47 PM, the Madison Network Control Center (NCC) saw numerous alarms when the synchronizer (SYNC-6A) card in an iMTN (RCPKNJ02K34) failed and the system did not switch to the backup (SYNC-6B card) as designed. Loss of this system affected message and special service circuits between Rochelle Park and the 23 wire centers in this sector. The NCC contacted Verizon Tier 2 Support and Alcatel Technical Support to work on the trouble.</p> <p>Initial attempts to reset the SYNC cards were unsuccessful. Administrative processor (MS) failures caused problems communicating with the system that had to be resolved before the actual trouble could be addressed.</p> <p>Alcatel directed that the SYNC 6B card be replaced. When this failed to restore the system, on August 18 at 4:21 AM, the SYNC 6A card was replaced and the SYNC 6B came into service restoring some traffic. When the SYNC 6A card returned to service, the remaining traffic began to restore. To expedite restoration of traffic, Alcatel began manually restoring the system. By noon, 954 T3's, approximately 1,854,600 access lines, were restored to service. The remaining 46 inter-exchange carrier (IEC) T3 systems had to be physically moved to a spare shelf. At 13:30, Verizon completed moving the 46 T3's and all service was restored.</p> <p>Preliminary analysis indicated that the failure of the SYNC 6A card was not recognized by the system software, did not produce a proper alarm indication, and did not invoke a switch to the redundant SYNC 6B card.</p>	
Direct Cause <b>Design – Software</b>	

Root Cause Design – Software: Ineffective fault recovery or re-initialization action	
Name and Type of Equipment Alcatel Integrated Multirate Transport Node (iMTN) broadband cross connect system, Release 4.1.0	Specific Part of the Network Involved Broadband Digital Cross Connect System (BDCS)
Methods Used to Restore Service  Both synchronizer cards in the iMTN were replaced. 46 inter-exchange carrier (IEC) T3's had to be physically moved to another shelf	
Steps Taken to Prevent Recurrence of the Incident  Verizon has sent the synchronizer cards to Alcatel for analysis.  Verizon has requested that Alcatel provide: <ol style="list-style-type: none"> <li>1. A written analysis and action plan to correct "silent sync failure"</li> <li>2. Documentation/flow-charted system restoral procedures that will ensure consistent and timely system restoration from catastrophic failures.</li> </ol> Verizon is expediting final testing, acceptance and deployment of release 4.1.1.	
Evaluation of Best Practices  Two "Best Practices" recommended by the FCC's Network Reliability Council's publication, June 1993, <i>A Report to the Nation</i> , apply to this outage. The first "Best Practice" in Section D, 6.1.4 makes two recommendations: <ul style="list-style-type: none"> <li>• Eliminate the possibility of silent failures on any DCS system component, including OS or Management System, cross-connect or communication links.</li> <li>• There must be sufficient processor and communication transport capability to simultaneously process messages from a major network event and remotely control the DCS</li> </ul> A second "Best Practice" that applies is Section D, 6.4.1: "Equipment suppliers should provide improved documentation on memory backup procedures and methods to recover from total system outages."	
Contact Person Shawn Donnelly	Telephone Number of Contact Person 202-336-7892

# UPDATED INFORMATION!

## VERIZON FCC NETWORK DISRUPTION INITIAL REPORT

00-132

TICKET #: SAC-3F2

1.	DATE AND TIME OF INCIDENT:	08/17/2000	11:58:00 PM
2.	GEOGRAPHIC AREA AFFECTED:	Rochelle Park, NJ	
3.	MAXIMUM NUMBER OF CUSTOMERS AFFECTED:	Approx. 900 T3s	
4.	TYPE OF SERVICES AFFECTED:		
	<input type="checkbox"/> EMERGENCY-SERVICE <input checked="" type="checkbox"/> INTERLATA <input type="checkbox"/> OTHER		
	<input checked="" type="checkbox"/> INTRALATA <input type="checkbox"/> 800 SERVICES		
5.	DURATION OF OUTAGE:	Most service restored by 07:30 08/18/00 however full recovery is ongoing at 10:15 08/18/00	
6.	ESTIMATED NUMBER OF BLOCKED CALLS: Approximately 360,000		
7A.	TYPE EQUIPMENT:	Other	VENDOR: Alcatel
7B.	APPARENT OR KNOWN CAUSE OF INCIDENT: An IMTN frame, which is an electronic T3 cross connect frame, was out of service due to a defective sync timing card in the frame		
8.	METHOD USED TO RESTORE SERVICE: The sync card was replaced and the frame went through its recovery process		
9.	STEPS TAKEN TO PREVENT RECURRENCE: To be determined at Root Cause Analysis		

Pursuant to Section 0.459 (b) of the Commission Rules, and for reason set forth below, confidentiality is requested for items:

Reason for confidentiality:

☐ A Request to supplement the showing requested by section 0.459 (b) is hereby made and will be submitted expeditiously.

Request Supplement:

DATE AND TIME OF REPORT: 08/18/2000 01:32:18 AM

CONTACT AND TELEPHONE #: Marianne Sweeney 973 649-7440

NOTE: Retention period is 6 Years